

1           WHAT IS CLAIMED IS:

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3   1.     A method of visualizing sound fields of individual sound sources using acoustic  
4     holography, comprising the steps of:

5           a) calculating sound pressures on a sound source plane using sound pressures  
6     measured on a hologram plane;

7           b) extracting a reference sound source locating at a position where a sound  
8     pressure has the largest value on the total sound field, and determining the sound pressure  
9     at the position as a signal coherent to the reference sound source;

10          c) obtaining a sound field of the reference sound source using the signal coherent  
11     the reference sound source;

12          d) eliminating the sound field of the reference sound source from the total sound field  
13     to get a remaining sound field, and determining whether any remaining sound field exists;  
14     and

15          e) if any remaining sound field exists at step d), applying the step b) to the step d) to  
16     the remaining sound field.

1   2.     The method of visualizing sound fields of individual sound sources according to  
2     claim 1, wherein the sound field of the reference sound source at step c) is obtained by  
3     calculating contribution of each of the sound sources in a spectral matrix consisting of auto-  
4     spectra at individual points on the sound source plane and cross spectra between different  
5     points by using the signal coherent to the reference sound source.

1 3. A computer-readable recording medium for recording a program, which executes  
2 the steps of:

3 a) calculating sound pressures on a sound source plane using sound pressures  
4 measured on a hologram plane;

5 b) extracting a reference sound source locating at a position where a sound  
6 pressure has the largest value on the total sound field, and determining the sound pressure  
7 at the position as a signal coherent to the reference sound source;

8 c) obtaining a sound field of the reference sound source using the signal coherent  
9 the reference sound source;

10 d) eliminating the sound field of the reference sound source from the total sound field  
11 to get a remained sound field, and determining whether any remaining sound field exists;  
12 and

13 e) if any remaining sound field exists at step d), applying the step b) to the step d) to  
14 the remaining sound field